

CLAIMS

What is claimed is:

1. A hand-held portable vacuum comprising:
 - an inlet housing defining an inlet that is configured to receive dirt, dust and debris therethrough;
 - an outlet housing releasably coupled to the inlet housing, the outlet housing defining a handle, an intake, a fan mount and an outlet, the handle being configured to be grasped by a single hand of a user to permit the user to maneuver the hand-held portable vacuum and orient the inlet into a desired position, the fan mount being disposed between the intake and the outlet;
 - a fan assembly mounted in the fan mount and housed by the outlet housing, the fan assembly having a fan inlet and being operable for generating an air flow therethrough;
 - a filter disposed between the inlet and the intake and being releasably coupled to one of the inlet housing and the outlet housing; and
 - a filter indicator coupled to the outlet housing and being in fluid communication with a portion of the outlet housing between the fan inlet and the intake, the filter indicator including a pressure differential indicator that is configured to indicate a pressure differential between air in the portion of the outlet housing and atmospheric air pressure.

2. The hand-held portable vacuum of Claim 1, wherein an indicator recess is formed in the outlet housing, the indicator recess being configured to receive the filter indicator therein.

3. The hand-held portable vacuum of Claim 2, wherein a flow aperture is formed through the outlet housing at a point within the indicator recess, the flow aperture facilitating fluid connection between the filter indicator and the fan inlet through the outlet housing.

4. The hand-held portable vacuum of Claim 2, wherein a mounting aperture is formed through the outlet housing, the mounting aperture being configured to receive therethrough a bayonet leg that secures the filter indicator to the outlet housing.

5. The hand-held portable vacuum of Claim 4, wherein the mounting aperture is formed through the indicator recess.

6. The hand-held portable vacuum of Claim 2, wherein the indicator recess includes a gasket flange, and wherein a gasket seals an interface between the filter indicator and the gasket flange.

7. The hand-held portable vacuum of Claim 1, wherein the outlet housing comprises a pair of housing shells.

8. The hand-held portable vacuum of Claim 7, wherein each housing shell includes a circumferentially extending rib that defines at least a portion of the fan mount.

9. The hand-held portable vacuum of Claim 8, further comprising a resilient seal that forms a seal between the fan assembly and the fan mount.

10. The hand-held portable vacuum of Claim 1, wherein the inlet housing defines a dirt cup.

11. The hand-held portable vacuum of Claim 1, wherein the fan assembly includes a power cord that is adapted to be coupled to an alternating current power source.

12. A bag-less, hand-held portable vacuum comprising:

a dirt cup having an inlet that is configured to receive dirt, dust and debris therethrough; and

a housing assembly having a housing, a fan assembly and a filter indicator, the housing being releasably coupled to the dirt cup and including a handle and an intake, the handle being configured to be grasped by a single hand of a user to permit the user to maneuver the hand-held portable vacuum and orient the inlet into a desired position, the fan assembly being mounted in the housing and having a fan inlet, the filter indicator being coupled to the housing and in fluid communication with a portion of the housing between the fan inlet and the intake, the filter indicator being responsive to an air pressure in the portion of the housing and providing at least one of a visual and an audible alarm when the air pressure reaches a predetermined threshold.

13. The bag-less, hand-held portable vacuum of Claim 12, wherein a indicator recess is formed in the housing, the indicator recess being configured to receive the filter indicator therein.

14. The bag-less, hand-held portable vacuum of Claim 13, wherein a flow aperture is formed through the outlet housing at a point within the indicator recess, the flow aperture facilitating fluid connection between the filter indicator and the fan inlet through the outlet housing.

15. The bag-less, hand-held portable vacuum of Claim 13, wherein a mounting aperture is formed through the outlet housing, the mounting aperture being configured to receive therethrough a bayonet leg that secures the filter indicator to the outlet housing.

16. The bag-less, hand-held portable vacuum of Claim 15, wherein the mounting aperture is formed through the indicator recess.

17. The bag-less, hand-held portable vacuum of Claim 12, wherein the housing comprises a pair of housing shells.

18. The bag-less, hand-held portable vacuum of Claim 12, wherein the fan assembly includes a power cord that is adapted to be coupled to an alternating current power source.

19. A portable vacuum comprising:

an inlet housing defining an inlet that is configured to receive dirt, dust and debris therethrough;

an outlet housing releasably coupled to the inlet housing, the outlet housing defining a handle, an intake, and an exhaust outlet;

a fan assembly mounted in the outlet housing, the fan being operable for generating an air flow that is exhausted through the exhaust outlet;

a hose having a first end, which may be selectively coupled to the exhaust outlet, and a second end; and

a set of inflator nozzles, each of the inflator nozzles including a coupling portion, which is configured to selectively engage the second end of the hose, a tapered male connector that defines an outlet aperture, and a relief aperture that extends through a wall of the inflator nozzle into a generally hollow interior;

wherein the tapered male connector of each inflator nozzle is differently sized.

20. The portable vacuum of Claim 19, further comprising a latch for releasably securing the second end of the hose and the coupling portion to one another.

21. The portable vacuum of Claim 19, wherein the latch includes a recess that is formed into one of the coupling portion and the second end of hose, and an engagement member that is associated with the other one of the coupling portion and the second end of the hose, wherein placement of the engagement member in the recess latches one of the inflator nozzles to the second end of the hose.

22. The portable vacuum of Claim 21, wherein a keyway is formed in one of the coupling portion and the second end of the hose and a mating key is associated with the other one of the coupling portion and the second end of the hose, and wherein placement of the key in the keyway aligns the engagement member and the recess to one another.

23. The portable vacuum of Claim 21, wherein each of the inflator nozzles further includes a tab that is adapted to be grasped by a user of the portable vacuum to lift the engagement member out of the recess.

24. The portable vacuum of Claim 23, wherein the tab is axially in-line with the relief aperture.

25. The portable vacuum of Claim 23, wherein the tab is coupled to the coupling portion by at least one living hinge.

26. The portable vacuum of Claim 25, wherein the living hinges are located adjacent the relief aperture.

27. The portable vacuum of Claim 24, wherein at least one link member couples an end of the uncoupling tab opposite the living hinges to the coupling portion, the at least one link member being operable for limiting an amount by which the uncoupling tab may be pivoted about the living hinges.

28. The portable vacuum of Claim 19, wherein the relief aperture is generally triangular in shape.

29. The portable vacuum of Claim 19, wherein an area of the relief aperture is about twice as large as an area of the outlet aperture in at least one of the inflator nozzles.

30. The portable vacuum of Claim 19, wherein an area of the relief aperture is about 0.09 square inches.

31. The portable vacuum of Claim 19, wherein the set of inflator nozzles includes at least three inflator nozzles.

32. A hand-held portable vacuum comprising:

an inlet housing defining an inlet that is configured to receive dirt, dust and debris therethrough;

an outlet housing releasably coupled to the inlet housing, the outlet housing defining a handle, an intake, a fan mount and an outlet, the handle being configured to be grasped by a single hand of a user to permit the user to maneuver the hand-held portable vacuum and orient the inlet into a desired position, the fan mount being disposed between the intake and the outlet;

a fan assembly mounted in the fan mount and housed by the outlet housing, the fan assembly having a fan inlet and being operable for generating an air flow therethrough;

a filter disposed between the inlet and the intake and being releasably coupled to one of the inlet housing and the outlet housing;

a filter indicator coupled to the outlet housing and being in fluid communication with a portion of the outlet housing between the fan inlet and the intake, the filter indicator including a pressure differential indicator that is configured to indicate a pressure differential between air in the portion of the outlet housing and atmospheric air pressure;

a hose having a first end, which may be selectively coupled to the exhaust outlet, and a second end; and

a set of inflator nozzles, each of the inflator nozzles including a coupling portion, which is configured to selectively engage the second end of the hose, a

tapered male connector that defines an outlet aperture, and a relief aperture that extends through a wall of the inflator nozzle into a generally hollow interior;

wherein the tapered male connector of each inflator nozzle is differently sized.

33. A portable vacuum comprising:

an inlet housing defining an inlet that is configured to receive dirt, dust and debris therethrough;

an outlet housing releasably coupled to the inlet housing, the outlet housing defining a handle, an intake, and an exhaust outlet;

a tubular extension; and

an adaptor for selectively coupling the hose to the exhaust outlet, the adaptor including a first coupling portion, a second coupling portion, and a deflectable portion that is disposed between the first and second coupling portions, the first coupling portion having an outer perimeter that is sized to be received into the exhaust outlet, the second coupling portion being configured to engage a first end of the tubular extension, the deflectable portion in response to the application of a force to the adaptor that exceeds a predetermined force;

wherein the adaptor is sufficiently rigid to support the tubular extension without deflection.